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CURRENT STATE OF THE CHIMPANZEE PET TRADE IN SIERRA LEONE

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ABSTRACT I investigated the current state of the chimpanzee pet trade in Sierra Leone by analyzing data collected on chimpanzees received at the Tacugama Chimpanzee Sanctuary. The country was once a major exporter of live chimpanzees to the United States, Asia, and Europe. Even after international laws restricted the trade of chimpanzees, the practice continued within Sierra Leone, leading to the establishment of the Tacugama Chimpanzee Sanctuary in 1995. The sanctuary currently houses 82 chimpanzees, 80% of which were ≤ 3 years old upon their arrival. Although about 45% of chimpanzee owners were expatriates, the price of pet chimpanzees and the intention of local owners to sell chimpanzees indicate the role played by expatriates in the pet trade as buyers. My analysis indicates that more than half of chimpanzee owners are prepared to give up their pet chimpanzees, suggesting that the number of buyers could be reduced through a well-designed sensitization program about wildlife laws and the problems related to keeping chimpanzees as pets.

KeyWords: Chimpanzees; Pet trade; Sanctuary; Sierra Leone.

INTRODUCTION

I. Chimpanzee Pet Trade

Over the last three decades, the number of wild chimpanzees has decreased by an estimated 60% (Butynski, 2003). Major causes for this decrease include habitat destruction and unsustainable hunting for trade (as bushmeat or live pets). Although it is difficult to gather precise data about chimpanzees removed from the wild as a result of hunting for bushmeat, reports on bushmeat trade and markets, mainly in Central Africa, have estimated its impact on the survival of wild chimpanzee populations (Ape Alliance, 1998; Bowen-Jones & Pendry, 1999). In terms of the trade in live form, some information is available about the export of chimpanzees from Africa in the past (e.g. Harrison, 1971; Teleki & Baldwin, 1981). Current information about the live trade is not available, although the ape pet trade in Africa, including chimpanzees and gorillas, is still a serious problem: 40% of the apes held in sanctuaries in Africa were found awaiting sale, and 30% were being kept as pets prior to coming to sanctuaries (Farmer, 2002). The increasing number of orphaned chimpanzees has led to the establishment of 17 sanctuaries in African countries over the past few decades (Mills et al., 2005). Since 2000, the number of chimpanzees in these sanctuaries has increased by 59% (Mills et al., 2005). Many sanctuaries are reaching

capacity, and some no longer accept new arrivals (Farmer, 2002; Carter, 2003). Closing the door to newly confiscated animals weakens an important function of sanctuaries in law enforcement, so the reduction of the number of newcomers is a serious issue. The situation and social and historical backgrounds of the commercial trade of live chimpanzees may differ by country, and reducing the live trade will require understanding the issue within each context. Sanctuaries that confiscate and receive pet chimpanzees can obtain some, although limited, valuable information about the number of chimpanzees confiscated, owners or dealers, and other trade-related information.

I analyzed data on chimpanzees received by the Tacugama Chimpanzee Sanctuary in Sierra Leone from 2001 to 2006. My goal was to use quantitative data for the first time to describe the current state of the chimpanzee pet trade.

METHODS

I. Study Site: Sierra Leone

Sierra Leone is located within the geographical range of endangered western African chimpanzees (*Pan troglodytes verus*; Hilton-Taylor, 2000; Groves, 2001). Teleki (1989) estimated that Sierra Leone had a maximum of 2,500 wild chimpanzees. Teleki's (1989) survey was conducted more than 20 years ago, and the wild chimpanzee population has probably decreased since then, as it has in other western African countries (Kormos et al., 2003b). Because of the long civil war in Sierra Leone, which lasted from the beginning of the 1990s until 2002, data on the wild chimpanzee population have not been updated in more than two decades.

No available data indicate whether chimpanzees are hunted for meat or to capture infants in Sierra Leone. Quantitative data on the bushmeat trade in Sierra Leone (or anywhere in West Africa) are very scarce. Reports from the Ivory Coast (Caspary, 1999 cited in Kormos et al., 2003a) and Liberia (Anstey, 1991 cited in Kormos et al., 2003a) indicate that only a small fraction, less than 0.1%, of meat seized from poachers or meat found in local markets is from chimpanzees. However, these estimates may be low because ape meat may not be traded openly or it may be consumed in villages because carcasses are difficult to carry (Kormos et al., 2003a). Whatever the purpose for hunting, removing individuals greatly affects wild populations, especially for species of large mammals, such as chimpanzees, that have a very low reproductive rate.

Before the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) restricted the international trade of chimpanzees, Sierra Leone was a major exporter of live chimpanzees, and the commercial trade still continues within the country. From the 1950s to the 1980s, more than 2,000 live chimpanzees were exported to Europe, the United States, and Japan for use in biomedical research and the entertainment industry (Teleki,

1980; Teleki & Baldwin, 1981). Two main wildlife dealers actively captured and exported live young chimpanzees (Teleki, 1980). One was an expatriate, Dr. Franz Sitter, who had a large chimpanzee trade operation and established a network within the country as well as on the international market (Teleki, 1980; Peterson & Goodall, 1993). Dr. Sitter was a well-known businessman who dealt in poultry, wildlife products, artifacts, and tourism, and even shared his medical supply business with the former president of the country (Peterson & Goodall, 1993). He is believed to have left the country in the beginning of the 1990s, but people still mention about him and his chimpanzee trade. Chimpanzees are not currently exported, at least not openly or officially. However, the chimpanzee pet trade continues within the country. Teleki & Baldwin (1981) reported that tourists and expatriates, especially US Peace Corps volunteers, used to be a large market for monkeys and chimpanzees. In 1989, 60 chimpanzees were kept as pets in the capital of Freetown alone (B. Amarasekaran, personal communication in October 2006).

Under Sierra Leonean legislation, chimpanzees are listed as “protected animals” by the 1972 Wildlife Conservation Act. Two years after this act was passed, the Wildlife Conservation Branch was established as a government agency to manage wildlife within the country. In 1978, a complete ban on the export of chimpanzees was issued, and in 1981, a Presidential announcement was made in parliament to ban all wildlife products and specimens for 5 years. In 1995, the Sierra Leonean government signed the Convention on International Trade in Endangered Species. However, ratification is still pending because the 1972 Wildlife Conservation Act is outdated and is insufficient to protect chimpanzees and other wildlife (Hanson-Alp et al., 2003; Unti, 2006). In July 2007, the country finally enacted a new law prohibiting the capture, killing, and possession of chimpanzees, and with this new law, offenders will face a fine of up to US\$1,000 or jail time (Species Survival Network, 2007).

In 1995, the Tacugama Chimpanzee Sanctuary was established by a Sri Lankan expatriate (presently the program director) in collaboration with the Ministry of Agriculture and Forestry and the Conservation Society of Sierra Leone; its mission is to provide a facility for confiscated chimpanzees and to stop the chimpanzee pet trade. Initial funding was provided by the European Union, and the Sierra Leonean government allocated land in the Western Area Forest Reserve. The sanctuary is about 10 km away from the capital city, Freetown. Two officials from the Wildlife Conservation Branch, a unit under the Ministry of Agriculture, Forestry, and Food Security, were appointed to help the program director manage the sanctuary, especially with regard to law enforcement.

II. Data Collection at the Tacugama Chimpanzee Sanctuary

When chimpanzees are received or confiscated by the Tacugama Chimpanzee Sanctuary, as part of standard procedures, information on the life history of each chimpanzee is recorded upon arrival to create a profile for each individ-

ual. Data used in this paper were collected from these records at the Tacugama Chimpanzee Sanctuary, the only place where information about pet chimpanzees is available in Sierra Leone. While some of the chimpanzees have incomplete data records, in most cases, the information available was adequate and sufficiently systematic to analyze the current trends in the chimpanzee pet trade in Sierra Leone. Because there are no particular wildlife dealers or fixed markets for wildlife products, it is extremely difficult to obtain other data on the live-animal trade, such as the number of chimpanzees captured from the wild for trading or the number of chimpanzees traded within the country.

I focused mainly on the period January 2001 to December 2006. I worked as a volunteer at the sanctuary from January 2001 to March 2004. After March 2004, the staff at the sanctuary continued to collect information. Whenever possible, during the confiscation process or when a chimpanzee was brought to the sanctuary, chimpanzee owners were questioned about themselves and about how they acquired the chimpanzee (Table 1). In some cases, the actual owner was not available, and thus the term “owner” refers to any individual in possession of a chimpanzee before it was transferred to the sanctuary. Therefore, an owner may not necessarily have had “custody” of the chimpanzee; he or she might have kept the chimpanzee as a pet or as an item for sale, or may have only transported the animal to the sanctuary.

Data were also collected about chimpanzees received by the sanctuary from 1995 (the year it was established) to January 2001, based on work reports and interviews with sanctuary personnel. Some reports are incomplete or missing because Freetown was invaded twice during the civil war and the sanctuary was looted on a few occasions.

Table 1. Sample of questions asked of chimpanzee owners

Information about the chimpanzee
<ul style="list-style-type: none"> • Who is the owner of the chimpanzee? • Where and how did you get the chimpanzee? • From whom did you get the chimpanzee? Do you know how and where that person got the chimpanzee? • Do you know where the chimpanzee originally come from? • Did you pay for the chimpanzee? If so, how much? • Do you have other chimpanzees?
Information about the owner
<ul style="list-style-type: none"> • Name • Occupation • Nationality
<ul style="list-style-type: none"> • Before today (day of chimpanzee acquisition), did you know about the Tacugama Chimpanzee Sanctuary? If so, how did you learn about it? • Before today, did you know that it is illegal to trade and keep a chimpanzee as a pet?

I have also interviewed both local and international visitors to the sanctuary, local authorities in wildlife conservation, and people who used to be involved in the live chimpanzee trade to collect peripheral and qualitative information on the trade. Owners who provided information about their chimpanzees and other interviewees were generally cooperative, as they did not incur any penalties (other than giving up their chimpanzees to the sanctuary) because the study period preceded the new legislation establishing fines or jail time.

RESULTS

I. Number of Chimpanzees Held at the Sanctuary

The number of chimpanzees housed at the sanctuary has increased almost every year since its establishment in 1995 (Fig. 1). In 1995, it housed 11 chimpanzees; by the end of 2006, it housed 82 individuals. The only exception to this trend was in 1997, when a violent military coup against the President who was elected in the previous year led to a serious shortage of materials and commodities, including medication; some of the chimpanzees became seriously ill during that time and died. In 2001, the year before the country declared the end of the war, the sanctuary received 28 chimpanzees. On average, the number of chimpanzees housed at the sanctuary increased by 22.1% annually from 1996 to 2006. The sanctuary controls reproduction; four unexpected births occurred in 2003, but the data presented here do not include those births.

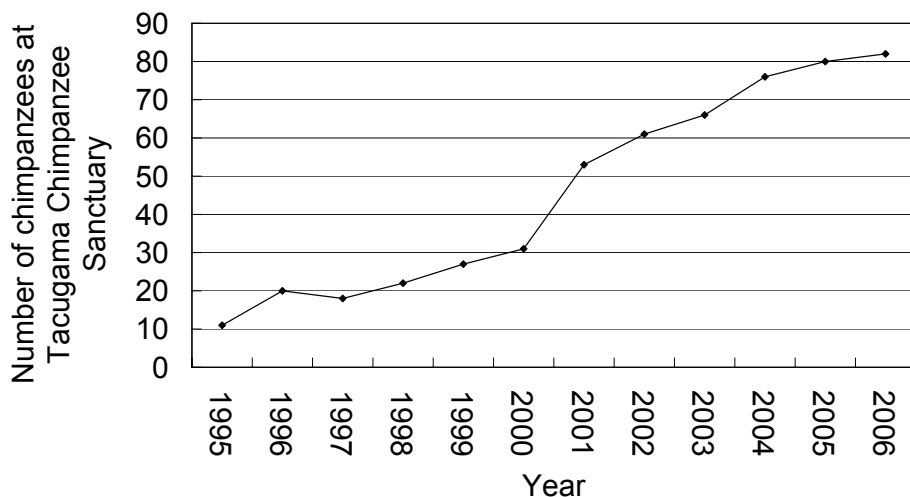


Fig. 1. Number of chimpanzees held at the Tacugama Chimpanzee Sanctuary 1995–2006

II. Estimated Age at Arrival

The ages of chimpanzees are estimated upon arrival by assessing dental emergence. This is a more reliable indicator than body size because the chimpanzees are kept under various conditions by different owners. A chimpanzee with a full set of deciduous teeth is usually approximately 1 year old; the emergence of the first permanent molars usually occurs at approximately 3 years of age; and permanent incisors usually appear at approximately 5 years of age (Kuykendall et al., 1992).

Of the 82 chimpanzees received at Tacugama, 8.5% were estimated at <1 year old at the time of arrival, and 73.2% were 1–3 years old. Thus, 81.7% of all chimpanzees received were ≤ 3 years old. Approximately 16% of the chimpanzees were between 3 and 5 years old, and only 2.4% of chimpanzees were >5 years old.

III. Place of Origin

In 54 cases, owners knew where the chimpanzee had originated or at least where it was bought. Determining precisely in which part of the country a chimpanzee was captured is usually impossible, so many of the places mentioned by owners were locations where chimpanzees were bought or found. Some chimpanzees may have been imported from Guinea or Liberia for sale in Sierra Leone; at least two owners said that they bought their chimpanzees in Guinea, and one owner said his chimpanzee was from Liberia.

Sierra Leone is divided into three provinces, Northern (35,936 km²), Eastern (15,553 km²), and Southern (19,694 km²), and one urban area, the Western Area (557 km²), which contains the capital Freetown and its suburbs (Fig. 2). No owners reported obtaining a chimpanzee from the urban area, although the Western Area contains wild chimpanzees in the Forest Reserve of Freetown Peninsula (Ausden & Wood, 1990). Of the three provinces, the Northern and Eastern Provinces include protected areas inhabited by wild chimpanzees, whereas the Southern Province has wild chimpanzees, but only in small forested areas near farm bush. The numbers of chimpanzees originating from each province did not differ greatly among the provinces (Table 2). However, it should be noted that the main roads from most towns in the Eastern Province leading to the capital pass through the Southern Province, which includes the second largest city in the country; it is possible that some chimpanzees reported as originating from the Southern Province actually originated in the Eastern Province and were traded in the Southern Province before reaching Freetown.

The provinces are subdivided into a total of 12 districts (Fig. 2). Most chimpanzees were reported as originating from Kono (Eastern Province), followed by Koinadugu (Northern), Bo (Southern), Kenema (Eastern), and Moyamba (Southern). Bonthe (Southern), which is mainly covered by swamp and mangroves, is the only district that was never mentioned (Table 2). Kono and Koinadugu are neighboring provinces, and both have protected forest reserves inhabited by wild

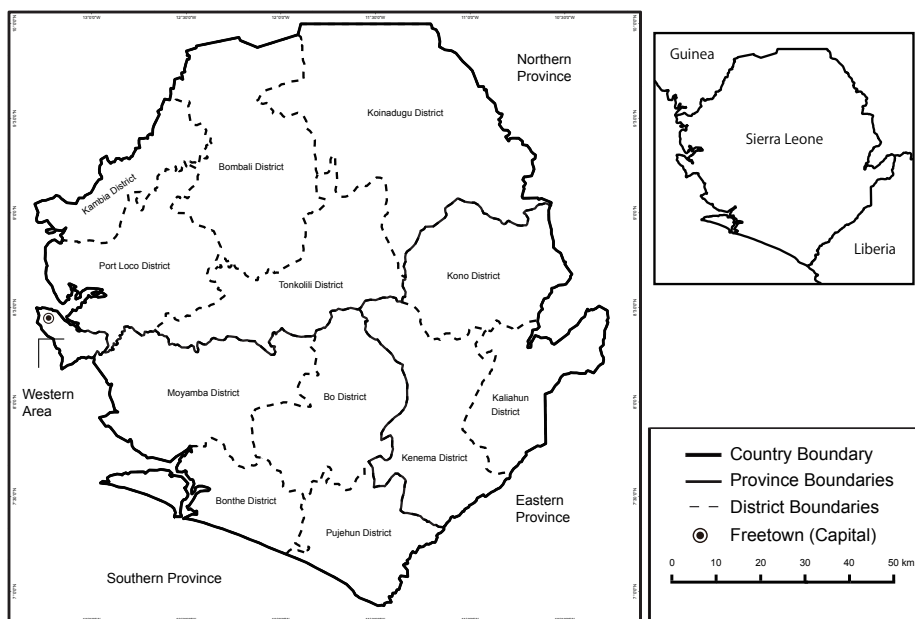


Fig. 2. Map of Sierra Leone showing provinces and districts.

Table 2. Place of origin by province and district (n=54)

Province/ District	Before 2001	2001	2002	2003	2004	2005	2006	Total
Western Area	0	0	0	0	0	0	0	0
Freetown Urban	0	0	0	0	0	0	0	0
Freetown Rural	0	0	0	0	0	0	0	0
Eastern								
Province	3	2	4	1	0	7	4	21
Kailahun	1	0	0	0	0	1	0	2
Kenema	2	2	1	0	0	0	0	5
Kono	0	0	3	1	0	6	4	14
Northern								
Province	0	3	2	4	4	1	3	17
Bombali	0	0	1	0	2	0	0	3
Kambia	0	1	0	1	1	1	0	4
Koinadugu	0	2	1	0	1	0	3	7
Port Loko	0	0	0	3	0	0	0	3
Southern								
Province	2	6	3	1	1	0	2	15
Tonkolili	0	0	0	1	0	0	1	2
Bo	1	2	2	0	1	0	0	6
Bonthe	0	0	0	0	0	0	0	0
Pujehun	0	1	0	0	0	0	1	2
Moyamba	1	3	1	0	0	0	0	5

chimpanzees. Wild chimpanzees also inhabit Guinea, which is located across the borders of both of these districts (Ham, 1997; Kormos et al., 2003c). Bo and Moyamba Districts are mostly covered by farm bush, but are located on main roads that connect the capital to the Eastern Province and extend to Liberia. Kenema District borders Liberia; the Gola Forest Reserve, which is the largest remaining forest block in Sierra Leone, is located near this border.

The main places of origin varied slightly over the 5-year period studied (Table 2). The Southern Province was reported more often in early years; however, more recently (since around 2006), the Eastern Province was reported more often, especially the district of Kono.

IV. Condition upon Arrival

The health of each chimpanzee was examined and recorded upon arrival, with a description of any visible conditions or symptoms of disease or injury. This information was available for 75 chimpanzees. The most frequently reported negative condition was being underweight (48.0%), followed by skin problems (22.7%), injury (21.3%), intestinal problems such as diarrhea (13.3%), and respiratory problems (5.3%). Of all chimpanzees for which data were available, 74.7% had at least one symptom or condition. It is important to note that these reports were limited to visible symptoms or conditions noted during a general observation period upon arrival; further examination (e.g. fecal analysis, urine analysis, hematology) may have revealed other underlying conditions that could not be observed externally. Injuries were mainly caused by chains or ropes that had been tied around the waist, neck, or limbs while the chimpanzee was in the possession of the owner. In two cases, chimpanzees had obviously lost some functionality of an arm or hand from injuries caused by snare traps. At least five chimpanzees had pellets lodged in the body.

V. Owners

Of the 72 cases in which information about owners was available, 33 chimpanzees (45.8%) had been owned or bought by expatriates and 39 (54.2%) had been owned by locals. Of the 39 owned by locals, 19 were intended for sale. Assuming that the 33 chimpanzees owned by expatriates were already traded, as there have been no reported cases of an expatriate directly capturing chimpanzees from the wild, at least 52 chimpanzees (72.2%) either had been or were about to be traded. In only 13 cases of chimpanzees owned by locals, the owners claimed that they had no intention to sell the chimpanzee(s).

VI. Types of Acquisition

The means by which the sanctuary acquired the chimpanzees were categorized into three groups: confiscation, handed in after being informed about the wildlife law, and handed in voluntarily. "Confiscation" refers to a situation in

Table 3. Acquisition method (n=79)

Acquisition Method	Number of cases	%
Confiscated	29	36.7
Handed in after being informed about the law	9	11.4
Handed in voluntarily	41	51.9

which the owner was informed that keeping a chimpanzee is illegal but still refused to give up the chimpanzee, and authorities or law enforcement bodies such as the Wildlife Conservation Branch, police, or national or international military officers took away the chimpanzee. “Handed in after being informed about the wildlife law” refers to a situation in which the owner was not aware of the law when he or she was contacted by sanctuary personnel, but agreed to give up the chimpanzee after being informed about the law. “Handed in voluntarily” means that the owner voluntarily came to or contacted the sanctuary to hand over the chimpanzee. In this case, the owner may or may not have been aware of the law when purchasing a chimpanzee, but later realized or learned that keeping or trading it was illegal, and therefore contacted the sanctuary or delivered the chimpanzee by his or her own free will. Of all chimpanzees acquired by the Tacugama sanctuary, 36.7% were confiscated, 11.4% were handed in after owners were informed about the law, and 51.9% were handed in voluntarily (Table 3). Of 41 voluntary cases, at least 7 owners reported “pity buying,” that is, the purchase of a chimpanzee specifically to remove it from the market and bring it to the sanctuary. It is possible that there were even more cases of pity buying, as owners may have been reluctant to admit paying for a chimpanzee.

VII. Market Price

The purchase price was available for 19 chimpanzees. In some cases, the owner was not directly involved in the monetary transaction or did not recall the price because the chimpanzee had been bought a long time before it was brought to the sanctuary. Owners could have paid either in the local currency, the leone, or in foreign currencies such as US dollars (USD) or euros. In one case, a chimpanzee was given as a gift to a local Paramount Chief. Chimpanzees were also exchanged for commodities such as rice; in such cases, the exact price of chimpanzees was unknown. In this study, only the data associated with a known monetary exchange were used. Regardless of the currency used, the price was converted to USD based on the exchange rate at the time of purchase. If the time of purchase was unknown, the rate on the day of acquisition by the sanctuary was used. On average, the amount paid for a chimpanzee was US\$61. The highest price was US\$300, the lowest was US\$15, and most (47.4%) ranged from US\$21 to US\$40 (Fig. 3).

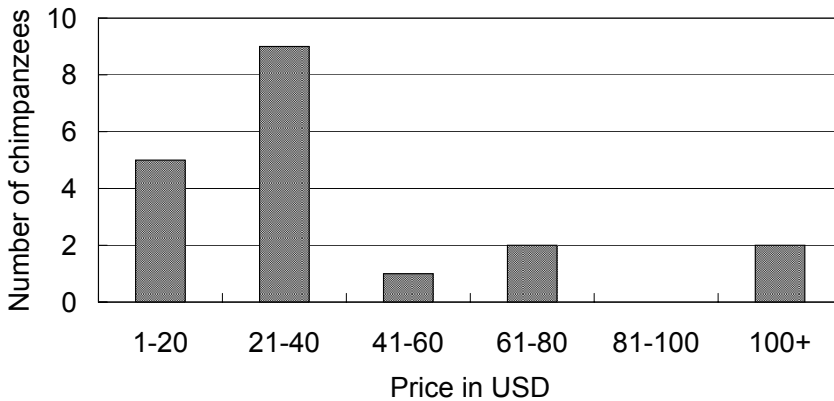


Fig. 3. Market price of chimpanzees

DISCUSSION

I. Flow of Trade

Chimpanzees were usually captured in the upcountry and brought to major towns or Freetown for sale. Currently, there is no fixed market for pet chimpanzees, and no particular dealers appear to specialize in trading live chimpanzees or other wildlife in Sierra Leone. Chimpanzee vendors travel to crowded areas or tourist areas such as beaches, bars, and restaurants to seek potential buyers. Sometimes they go to shops owned by expatriates (mainly Lebanese or Indian), offices of international nongovernmental organizations (NGOs), or compounds managed by the United Nations or British military battalions or mining companies. One owner (an expatriate working for a mining company) said that he had inherited the chimpanzees from the previous owner, also an expatriate, who had ordered hunters to capture young chimpanzees.

The data on the age of chimpanzees on arrival reflect the fact that infants aged 1–3 years are more marketable because they are easier to handle. Infants <1 year old may not survive the trauma of capture and transport. It is also possible that when kept as pets, many young chimpanzees do not survive to 5 years of age because of inadequate or inappropriate diet or disease. Owners may also kill chimpanzees when they became more difficult to handle (B. Amarasekaran, personal communication in October 2006).

II. Lasting Influence of Past Trading: Expatriates as Chimpanzee Buyers

Sierra Leone's history of exploitation and export of live chimpanzees still affects the chimpanzee pet trade. Even now, when asked about chimpanzees, local people in remote areas say that two animal dealers in Freetown buy chimpanzees and export or sell them to "white people." One of the dealers, expatriate

ate Dr. Sitter who has captured and exported over 2,000 chimpanzees through his local networks, no longer operates; however, his influence still lingers today. Although no particular dealer currently trades chimpanzees in numbers, the common belief is that selling chimpanzees to “white people” can generate a cash income.

Data on purchase price and on owners reveal that expatriates play a part in the chimpanzee pet trade of Sierra Leone. The country’s per capita gross national income was US\$140 in 2000 and US\$220 in 2005 (World Bank Group, 2007), so most locals would be unable to afford the average price paid for a chimpanzee (US\$60); the price is, however, a good incentive for them to trade live chimpanzees. In contrast, the price is trivial for many expatriates living in Sierra Leone.

Although almost half of all chimpanzees reported had been confiscated from locals, about half of these locals were holding the chimpanzees for sale. Local chimpanzee owners from upcountry come to the capital, hoping to sell the chimpanzee for a high price. Expatriates are more able to pay the proposed price. There is a common belief among the local people in general, from villagers to university students, that “white people” know how to train chimpanzees as domestic servants (Kabasawa, unpublished data; Conservation Society of Sierra Leone, 2006). Local people who used to sell chimpanzees mention that expatriates are also preferred customers because they will buy chimpanzees out of pity. For example, there are reports of expatriates purchasing chimpanzees because they were told by local owners that the animals would be slaughtered for meat or killed due to a lack of resources to feed them if they were not purchased. In many cases, expatriates were unaware of the wildlife laws or the fact that they were supporting the pet trade. They might have thought that their actions did not affect the chimpanzee trade because, to them, the price was not great (or they traded in commodities such as rice) or because they only bought one chimpanzee. Buyers were also unaware of the long-term commitment and danger involved in keeping a chimpanzee. Expatriate owners and some local owners from areas without wild chimpanzees who came to the sanctuary to deliver their chimpanzees saw adult chimpanzees for the first time, as most animals in the trade are young. Moreover, many visitors to the sanctuary reported that they thought that the chimpanzees in movies or on television were adults, without realizing that most of these performing chimpanzees are immature. In other cases, expatriates were aware of wildlife laws and the presence of the sanctuary and bought a chimpanzee specifically to bring it to the sanctuary, claiming that they rescued the chimpanzee from poor conditions and felt that it was the only way to save it. This ignorance about the effect of their actions contributes to the pet trade, regardless of good intentions to help the animals; this is an important obstacle to overcome in efforts to stop the chimpanzee pet trade in Sierra Leone. Most expatriates are in the country temporarily, from a few weeks to a few years, and therefore the dissemination of information about the illegality of trading and keeping chimpanzees must be a continuous process that includes a sensitization program and collaboration with organizations and

companies that recruit or attract expatriates.

Diplomatic immunity also presents a problem with some expatriates. For example, in 2000, a British marine bought a chimpanzee from a local person because the animal was kept in poor conditions. However, even after learning about the sanctuary and the country's wildlife laws, he refused to turn over the chimpanzee to the sanctuary; instead, he tried to get an export permit to send it to Monkey World, a primate sanctuary in the UK. Instead of the marine's being sensitized to the issue and respecting the laws of Sierra Leone and CITES, the situation was portrayed in the media as an animal rescue story, and Monkey World was happy to offer the chimpanzee a home. The issue was controversial among animal activists, primate conservationists, and supporters and workers at primate sanctuaries in Africa. The Sierra Leone government refused to issue the export permit, and the chimpanzee was turned over to the Tacugama sanctuary in January 2001.

The long-lasting civil war brought many expatriates to the country to work on peacekeeping operations and for the many NGOs related to humanitarian aid and peace-building programs. These expatriates who live in the country are a better market for traders in live chimpanzees than are tourists who only spend a short time in the country. The number of expatriates increased at the end of the war. For example, the United Nations alone deployed more than 16,000 and 17,000 peacekeeping operation workers in 2001 and 2002, respectively (UN, 2005), and more NGOs were established to rebuild the war-torn country. The number of chimpanzees received by the Tacugama Chimpanzee Sanctuary also increased dramatically around 2001.

During the civil war and post-conflict period, expatriates stationed in Sierra Leone were normally not permitted to bring their families. In some cases, living away from their home country may also have contributed to their desire for exotic pets. When the war was over, diamond mining resumed upcountry, and foreign mining companies brought workers, including expatriates, and stationed them in towns near mining areas. The data on chimpanzee origins (Table 2) revealed that major mining towns such as Kono (diamond and gold mines) and Koinadugu (gold mines) were mentioned more frequently after than before the end of the war in 2002. Individuals engaging in commerce and business have always made up a large proportion of expatriate chimpanzee owners in Sierra Leone, but the second-largest group shifted from military personnel to those who work in the mining industry.

III. Continued Smuggling among African Countries

Although the export of chimpanzees to Europe, the USA, and Asia is now under control, chimpanzee smuggling continues among African countries. At least three owners of chimpanzees taken in by the Tacugama Chimpanzee Sanctuary reported that the chimpanzees were originally caught in Guinea or Liberia. However, these numbers might be much higher; border control is difficult because people can travel by road or footpath. The borders of both coun-

tries include forest blocks that are inhabited by wild chimpanzees. Some Sierra Leonean towns near the Liberian border were inhabited by UN battalions toward the end of the war and are now inhabited by foreign mining employees. If young chimpanzees are caught on the Liberian side of the border, there is incentive to bring them to these towns. Dr. Sitter also reportedly hired local animal dealers to transport chimpanzees from Liberia and Guinea (Teleki, 1980). Another case in Nigeria was reported in 2001: a primate sanctuary in Nigeria confiscated a chimpanzee from a Nigerian soldier who said that the chimpanzee was bought in Sierra Leone when he was stationed there during a peacekeeping operation and that there were seven chimpanzees on his military flight returning to Nigeria from Sierra Leone (L. Gadsby, personal communication on 31 March 2007).

IV. Effect on Wild Populations

The chimpanzee pet trade has a major impact on the wild population because to capture a young chimpanzee requires killing the mother and possibly other chimpanzees using snare traps or firearms (Teleki, 1980). At least five chimpanzees received by Tacugama had pellets embedded in their bodies, indicating that firearms had been used during their capture. Two other chimpanzees arrived with permanent disabilities in their arms caused by snare traps. Many chimpanzees were very young at arrival, and some young chimpanzees that are unaccounted for likely died from the trauma of capture and during transport (Teleki, 1980). Studies of wild chimpanzees have shown that even among populations with high reproductive rates, females give birth only after reaching 10 years of age and produce one infant every 4 to 5 years (Sugiyama, 2004). This suggests that the capture of young chimpanzees (and the associated killing of mothers and others) for the pet trade has a much greater effect on the species than is indicted directly by the numbers of chimpanzees brought to sanctuaries.

V. Awareness about Wildlife Laws

Since 1995, the Tacugama sanctuary has tried to sensitize the general public about wildlife protection laws and the illegality and risks (e.g. diseases, difficulty handling) of possessing chimpanzees. However, because of limited resources and the political instability during the civil war, sensitization activities were limited to the Freetown area. Since 2005, a nationwide education program has been conducted in collaboration with the Jane Goodall Institute and the Conservation Society of Sierra Leone. Sensitization is important, as indicated by the data on acquisition that showed that many people, both locals and expatriates, were unaware of the laws and consequences related to the chimpanzee pet trade. There were only seven reported cases of pity buying, i.e., purchasing a chimpanzee while knowing it was illegal in order to turn it in to the sanctuary. However, except for those who refused to give up their animals and thus had them confiscated, the other owners were generally ready to com-

ply with the law; this was especially true of expatriates, who exhibited compassion towards orphaned chimpanzees. Most owners readily complied with the law once they learned about it: 63.3% of all cases fell into the categories of handing in the chimpanzee after being informed about the law and handing it in voluntarily (Table 3). In addition, owners who bought their chimpanzees out of pity and then brought them to the sanctuary intended to help the animals. Therefore, well-designed and well-focused sensitization activities may reduce the chimpanzee pet trade. Potential buyers, the majority of whom are expatriates, should be sensitized not only about the illegality of the trade, but also about the risks and cruelty involved in keeping chimpanzees as pets and the negative effects on wild populations. In addition, potential vendors and capturers, who are often locals, should be sensitized about the illegality of the trade, the risks of handling chimpanzees, and the species' importance as a natural resource and part of the country's ecosystem. Chimpanzees are one of only a few remaining large forest mammal species in Sierra Leone. They also play an important role in the culture and traditions of Sierra Leone. For example, much folklore includes chimpanzees, and chimpanzee body parts, such as bones and flesh, are considered elements of traditional medicine by some people. To my knowledge, no chimpanzees are currently being kept permanently as pets in Freetown; if there are any, they must have been brought recently from upcountry for sale in town. More residents, both nationals and expatriates, have become aware of the existence of the sanctuary and report people seen on the street with chimpanzees. Ironically, strong sensitization activities may result in more chimpanzees being brought to the sanctuary. The sanctuary is already receiving more confiscated chimpanzees as a result of law enforcement, and it continually struggles to find funds for their care.

CONCLUSION

It is not possible to determine the exact number of wild chimpanzees that are being captured, but the present analysis provides valuable information about the chimpanzee pet trade in Sierra Leone. The pet trade may differ among countries; a comparison with data from other countries' sanctuaries would be valuable. An analysis of data by country would allow sanctuaries to identify their target audience and customize effective strategies for education and sensitization programs to stop the pet trade; it would also allow sanctuaries to communicate better with conservationists to protect wild populations.

Orphaned chimpanzees are usually regarded as byproducts of the bushmeat trade. This may be the case in countries in which increased commercial logging has resulted in the immigration of logging employees and poachers into deep forests, creating a larger-than-ever bushmeat market (Ape Alliance, 1998). However, peak logging ended in Sierra Leone some time ago, although some timber extraction is ongoing; the country has already lost most of its original forest coverage. In Sierra Leone, the timber trade started as early as the beginning

of the 19th century (Alie, 1990; Harcourt, 1992) and flourished from the 1820s through the 1840s (Alie, 1990). Timber was exported to England for shipbuilding (Teleki & Baldwin, 1981; Harcourt, 1992), and logging declined by the end of the 19th century because most of the country's high forest had been felled by logging and shifting cultivation (Teleki & Baldwin, 1981). In 1976, only 5% of the country was covered by closed-canopy high forest, although at least 50% of the country experiences climatic conditions favorable to tropical evergreen forest (Davies, 1987). Like many African countries, Sierra Leone has a bushmeat trade, and the increasing human population places more pressure on wildlife and other natural resources. However, the consumption of chimpanzee meat is also affected by cultural and religious taboos (Kormos et al., 2003a). Islam forbids the eating of primates, and more than half of the population of Sierra Leone is Muslim (CIA, 2007). In addition, some ethnic groups and families consider the chimpanzee to be their totem animal (Kabasawa, unpublished data). Therefore, the bushmeat market is probably not a primary factor in Sierra Leone's chimpanzee trade. Other factors probably contribute more, such as the influence of the previous exploitation of live chimpanzees, the immigration of expatriates, and diamond mining. Although the consumption of chimpanzee meat may be taboo according to some religions or customs, hunting them for trade is not. A new market for live chimpanzees emerged when Western countries began to import chimpanzees in bulk for medical research and entertainment. The corpses of adult chimpanzees killed during the capture of young ones may be discarded or smoked for transport to areas where there is a demand for the meat (Teleki, 1980). It is also possible that hunting practices are changing as traditional or religious restrictions wane (Leach, 1994) and as a result of the hardships faced during the civil war, when people who did not customarily hunt or eat chimpanzees may have changed their habits.

It is important to educate and sensitize locals about wildlife protection and legislation, and the sanctuary can play an important role in this effort. However, with respect to the chimpanzee pet trade in Sierra Leone (and possibly other countries in which expatriates take part in this trade), it is more important to target expatriate communities to stop the trade. Locals are aware that Western countries want to protect wildlife, especially large mammals such as chimpanzees and elephants, yet simultaneously see that Westerners are willing to pay for pet chimpanzees. People who pay for chimpanzees with an intention to save them need to know that sanctuaries are there to rescue chimpanzees officially by collaborating with local authorities and at the same time break the vicious circle of pity buying, which encourages the capture of even more chimpanzees. In addition to eradicating the act of buying chimpanzees, it is important to eradicate the image of white people as potential chimpanzee buyers because this image alone could hinder sensitization activities that target locals. This is especially true when initiatives promoting conservation of chimpanzees and other wildlife are led by expatriates or international parties. This problem extends beyond local borders; new technologies in media and communication such as DVDs, the Internet, and satellite television now allow locals in areas

with chimpanzee habitat to see movies and television programs depicting captive chimpanzees in industrialized countries. This makes it difficult for locals to believe that the same white people who use chimpanzees for entertainment in their own country are not interested in buying pet chimpanzees.

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